

### **REMARKS**

Claims 1-12, 14-36 and 38-45 are pending in the instant application. Claims 1-12, 14-36 and 38-45 have been rejected by the Examiner. Claims 1-7, 15, 21-21, 26-28, 30, 32, 39, and 45 have been amended and claims 9-10, 12-14, 16, 29, 35-38, 40, 43, and 46 have been cancelled. The Applicants submit that the remaining claims are in condition for allowance and requests reconsideration and withdrawal of the outstanding rejections. No new matter has been entered.

### **Status of Claims**

Claims 1-12, 14-36 and 38-45 have previously been deemed allowable over the prior art (Office Action dated September 9, 2007). The only pending rejections are under 35 U.S.C. §§ 101 and 112, second paragraph.

### **Interview Summary**

On March 26, 2008, the undersigned telephonically contacted the Examiner currently assigned to this case to inquire as to the status of this application. During that interview, the undersigned asked whether overcoming the pending objections and rejections under 35 U.S.C. §§ 101 and 112, second paragraph, would result in an allowance. The Examiner would not commit to such a position because, while all pending claims had been previously deemed allowable over the prior (see Office Action dated September 9, 2007), the Examiner had to determine if any amendments made to overcome the rejections under U.S.C. §§ 101 and 112, second paragraph, required a new search and because the Examiner in this application was not the Examiner who had deemed the claims allowable. The undersigned would like to thank the Examiner for the courtesies extended during the telephone conversation.

### **Claim Objections**

Claims 1, 6, 15, 21, 22, 23, 28, 39 and 45 stand objected to due to informalities. Applicants have amended each of claims 1, 6, 15, 21, 22, 23, 28, 39 and 45 as suggested in the office action to overcome these objections. As such, Applicants respectfully assert that objections to claims 1, 6, 15, 21, 22, 23, 28, 39 and 45 have been overcome.

**Claim Rejections Under 35 USC §101**

Claims 1-12, 14-36 and 38-45 stand rejected under 35 U.S.C. §101 as the claimed invention is allegedly directed to non-statutory subject matter. In particular, the Examiner states that independent claims 1, 21, and 45 do not produce “any useful, concrete and tangible results that can be used for design improvement or for manufacturing a component or other practical purpose. Applicants respectfully disagree and, as such, traverse the rejection.

Claims 1, 21, and 45 are all directed to a method or a method contained on a computer readable medium for converting a vertically structured CAD/CAM model to a horizontally structured CAD/CAM model. As discussed in numerous places in Applicants’ specification, converting the vertically structured CAD/CAM model to a horizontally structured model allows for the realization of horizontally structured modeling techniques. (Page 1, lines 16-18; Page 6, lines 5-7) As discussed in Applicants’ specification, having a horizontally structured CAD/CAM model allows for individual features to be edited, suppressed or deleted individually without affecting the rest of the model. (Page 6, line 32- Page 7, line 2; Page 9, lines 9-15) Furthermore, and also as described in Applicants’ specification, such independence of individual features and the ability to edit them without impacting a significant portion of the model is not possible in vertically constructed models. (Page 9, lines 9-15)

Applicants’ invention allows for the conversion from vertically constructed models to horizontally constructed models. This allows for the realization of the advantages of horizontally constructed models which may, for example create a useful, concrete and tangible result that can be used for design improvement of a component if the component is designed in CAD or for other practical purposes. The rejection of claims 1, 21, and 45 under 35 U.S.C. §101 should be withdrawn.

**Rejections under 35 U.S.C. §112, second paragraph**

Claims 1-12, 14-36 and 38-45 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Applicants have amended the claims in effort to overcome these rejections. These amendments are made solely to overcome these rejections and to ensure consistency in the claims and are not based on any prior art. Furthermore, Applicants respectfully disagree that the claims are indefinite but are making the amendments discussed below to expedite the prosecution of this application. Applicants reserve the right to present the claims as previously presented in a continuation or other

application.

The Office Action requested that certain questions be answered and amendments made based on these answers. Applicants have, where applicable, answered the questions (the answers to all of which are contained in Applicants' specification) and made amendments to reflect the answers in an attempt to expedite the prosecution of the present application. The answers and explanation of amendments are made in the below sections which correspond with sections of the Office Action.

Applicants are cognizant of the length of this response and have endeavored to answer the questions posed in the Office Action in a succinct manner. Complying with the requests of the Office Action, however, requires the long response that follows.

#### **Section 5.1 of the Office Action**

In section 5.1, first paragraph, the Office Action asks "what is a feature?" As expressly stated in Applicants' specification, features are parts and details that combine to form a model. Applicant has amended claim 1 to recite "identifying a base modeling element of the vertically structured CAD/CAM model and establishing it as a base feature of the vertical structured CAD/CAM model." As disclosed explicitly in Applicants' specification, a "base feature is a base modeling element such as a linked body, cylinder, extruded sketch geometry, and the like that a model is "built" up from." (Page 10, lines 5-7)

In the second paragraph of section 5.1, the Office Action asks "what is the difference between a modeling element and a modeling feature?" Applicants' specification explicitly states that a model includes a plurality of modeling elements that include features. (Page 7, lines 3-5) That is, a modeling element includes modeling features, so the difference is one of granularity. In an effort to make this more clear, claim 1 has been amended to recite that the parent modeling element includes a plurality of modeling features dependent thereon.

In the third paragraph of section 5.1, the Office Action asks "what is a dependency?" and states that a dependency needs to be defined in the claim. Applicants specification gives a clear definition of a dependency in its definition of a parent/child relationship which is an associative relationship where changes to the parent affect the

child. (Page 8, lines 22-28) That is, one element is dependent upon another if changes in one element affects the other element but not vice-versa.

As to defining the word dependency in the claims, Applicants respectfully assert that this is not needed because the dictionary definition of the word dependency is quite clear. Dictionary.com defines dependency as: the state of being dependent. Dictionary.com defines the word dependent as “conditioned or determined by something else.” The Office Action states that absent a definition in the claims, “the examiner will give wide interpretation to the term to include any sort of relationship between two elements or features to reject the claims.” While Applicants concede that it is appropriate for an examiner to give a claim term its broadest reasonable interpretation (MPEP § 2111), this interpretation must comport with the plain meaning of a term, i.e., a dictionary definition (MPEP § 2111.01 III). Applicants assume that the Examiner will not construe the term dependency in a manner that is repugnant to the dictionary definitions.

In the fourth paragraph of section 5.1, the Office Action asks what a reference feature is and how it is defined. Applicants’ specification explicitly states that a reference feature “such as a coordinate system, datum, line, and like is an imaginary feature that is treated and manipulated like a physical feature but does not appear in the final physical model.” (Page 8, lines 4-6) The MPEP is quite clear that “[w]here an explicit definition of a claim term is provided by the applicant for a term, that definition will control the interpretation of the term as it is used in the claim. (MPEP §2110.01 IV, emphasis added)

In the fifth paragraph of section 5.1, the Office Action asks how the term datum should be interpreted. Applicants have amended claim 1 to recite a “datum plane” to make the claim more clear and to respond to the Office Action’s inquiry. Many other claims were also so amended to ensure language consistency between the claims and proper antecedent basis.

In the sixth paragraph of section 5.1, the Office Action asks what is a new reference feature. Quite simply, a new reference feature is a reference feature that is new. It is being introduced for the first time and is different than the “reference feature” previously introduced in claim 1. As discussed above, a reference feature is an imaginary feature that is treated and manipulated like a physical feature but does not appear in the

final physical model.” (Page 8, lines 4-6) As to what is meant by the new reference feature being descendent of the parent coordinate system, Applicants have amended claim 1 to recite that the new reference feature is dependent upon the parent coordinate system in an attempt to clarify the claim. Dependency is discussed above.

In the seventh paragraph of section 5.1, the Office Action asks what is an associative relationship. Applicants’ specification explicitly defines an associative relationship is on Page 8, lines 16-21. In particular, an associative relationship is an aspect of the well known art related to feature modeling (a typical process in all CAD/CAM systems) where features are linked so that changes in one feature may alter features it is linked to. As to how such a relationship is established, one of skill in the art will readily realize this and, if not, such is taught in many (if not all) reference manuals for CAD/CAM programs.

As to the questions in the eighth paragraph of section 5.1, claim 1 has been amended to make clear which dependency is deleted.

In the ninth paragraph of section 5.1, the Office Action asks what is the difference between placement and positioning. To overcome this rejection, claim 1 has been amended to recited only “placement” thus mooted the question.

In the tenth paragraph of section 5.1, the Office Action asks several questions about how certain associate relationships are established. It is believed that the amendments described above have clarified these issues. As to how relationships are actually established, Applicants respectfully assert that the establishment of relationships is well known in the CAD/CAM art and is actually a procedure done repeatedly in normal CAD/CAM drawing operations.

The first three questions in paragraph 11 of section 5.1 are believed to have been answered above or clarified based on the amendments to claim 1. As to the last question, “If you delete the dependency on Line 21 then why do delete the dependency again on Line 26.” The answer to this is quite simple. Examination of claim 1 at line 16 indicates that the method does at least one of: the steps that follow. Thus, it is not required that the dependency in line 21 be deleted and the dependency in line 26 be deleted, each step is independent of the other so the deleted dependency is the dependency described in that step.

In the twelfth paragraph of section 5.1, the Office Action what “another reference feature” is and how is it related to the reference feature, new reference feature and descendent reference feature. It should be understood that the term reference feature describes a particular type of feature as described above. The prefix words new, descendant, etc. serve to identify specific reference features. All claim 1 is saying in lines 28-29 is that the modeling feature a reference feature that is not itself, i.e., another reference feature.

In the last paragraph of section 5.1, the Office Action asks about the three different associative relationships. The word “direct” has been taken out of claim 1 so that should reduce the number of alleged different relationships to two. Further, the fact that an element (any type of element) may have more than one associative relationship does not change the kind of relationship that exists. For example, imagine a cylinder having a top plane, a bottom plane. In CAD/CAM it is well know that the top and bottom planes may be moved. Moving either of these planes will affect the length of the cylinder. Thus, the cylinder has an associative relationship with both the top and bottom planes.

#### **Section 5.2 of the Office Action**

Claim 2 has been amended to recite that the datum is a datum plane and, thus, it is believed that all of the questions posed in this section of the Office Action have been mooted. That is, the datum is not a number or a value thus the questions are no longer relevant.

#### **Section 5.3 of the Office Action**

Claim 3 has been amended to recite that the datum is a datum plane and, thus, it is believed that all of the questions posed in this section of the Office Action have been mooted. That is, the datum is not a number or a value thus the questions are no longer relevant.

#### **Section 5.4 of the Office Action**

Paragraph 5.4 asks what a primitive element is. Applicants have amended claim 4 to recite only a “primitive.” Primitives are well know elements in CAD/CAM systems are defined on Page 7, line 29 to Page 8, line 2.

### **Section 5.5 of the Office Action**

Section 5.5 asks two separate questions. First, the Office Action asks what is meant by converting an element to a feature. This question is now moot because the term element has been removed. As the claim stands now, a primitive is converted to an element. An explanation of this process is described on Page 12, lines 16-32.

The second paragraph of section 5.5 asks “what is a feature?” A feature is explicitly defined on Page 8, lines 3-11 of Applicants’ specification and, as described above, that definition, not the alleged 188 possible interpretations, must be applied when construing the claims.

### **Section 5.6 of the Office Action**

The first paragraph of section 5.6 asks how the new feature is different from the feature. Quite simply, it is a new feature, not “the feature”. This new feature is just a new feature and could be any kind of feature but, in many instances, may be a modeling feature (also defined on Page 8, lines 3-11).

As to the second paragraph, claim 1 has already been amended to only placement as has claim 6 thereby mooted the question.

### **Section 5.7 of the Office Action**

Claim 7 has been amended to make clear which associative relationship is being narrowed thereby mooted the questions in section 5. 7.

### **Remaining Sections of 5**

Applicant has either cancelled claims or amended claims (claim 15) to make them consistent with the above answers and claim amendments. As such, there are not discussed in detail herein because they are already believed answered.

### **Remaining Claim Amendments**

The remaining claims were also rejected in the Office Action. These claims, however, were not expressly detailed in the Office Action. Applicants have assumed that the same reasons for rejections applied in office apply to the remaining claims as well. As such, Applicants have amended the remaining claims to the extent claims that were similar were amended as described above. Applicants believe these amendments ensure

that this Amendment is fully responsive even though all claims were not specifically rejected.

### **CONCLUSION**

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested. It is submitted that the foregoing amendments and remarks should render the case in condition for allowance.

Accordingly, as the cited references neither anticipate nor render obvious that which the applicant deems to be the invention, it is respectfully requested that the remaining claims be passed to issue.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,  
DIANE M. LANDERS ET AL.

CANTOR COLBURN LLP  
Applicants' Attorneys

By: /M. Brad Lawrence/  
M. Brad Lawrence  
Registration No. 47,210

Date: May 8, 2008  
Address: 20 Church Street, 22<sup>nd</sup> Floor  
Hartford, CT 06103  
Telephone: 860-286-2929  
Fax: 860-286-0115